

### REMARKS

Examiner William Boddie is thanked for the thorough examination and search of the subject Patent Application.

Claims 1, 30, and 61 have been amended, claims 2 and 31 have been cancelled.

All Claims are believed to be in condition for Allowance, and that is so requested.

Reconsideration of the rejection of claims 1-3, 8, 11-15, 17-20, 22-23, 26-32, 37, 40-45, 49-51, 53-54, 57-63, 65, 67-70, 75, 78-84, 86-89, 91-92 and 95-98 under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688), hereinafter Dowling, in view of Colorado (US 7,016,701) is requested, based on amended claims and on following remarks:

The amended Claim 1 of the claimed invention discloses:

1. (currently amended) A system to perform a light show, wherein LED modules are displaying related light beams having defined properties, wherein said properties have been defined prior to performing said light show, is comprising:

an integrated circuit comprising:

an user interface to input information about properties of said light beams, wherein said interface is directly connected to a memory;

said memory to store the information about the properties of said beams to be displayed;

a sequencer to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;

said LED driver unit comprising a driver for each color of said LED modules able to control the intensity of light, wherein the LED driver unit is

connected between said memory and first terminals of said arrangement of at least one LED module; and  
an electrical connection between said LED driver unit and said arrangement of at least one LED module; and  
said arrangement of at least one LED module.

The amendment of claim 1 disclosing an user interface being directly connected to the memory is supported by Fig. 3 of the claimed invention. Claims 30, 61 and 99 have been similarly amended.

Applicant respectfully disagrees that Dowling discloses an integrated circuit comprising

**“an user interface** to input information about properties of said light beams, wherein said interface is directly connected to a memory;  
**said memory** to store the information about the properties of said beams to be displayed;  
**a sequencer** to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;  
**said LED driver** unit comprising a driver for each color of said LED modules able to control the intensity of light, wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module; ...”

as the claimed invention does.

In regard of integrated components Dowling suggests an integration of only an processor and a controller, i.e. LED driver (mid of paragraph 54):

“The **processor** 2 and **controller** 3 may be incorporated into one device, e.g., sharing a single semiconductor package.”

It should be noted that Dowling **neither** includes a **memory** to store the information about the properties of said beams to be displayed nor an **interface** being directly connected to the memory in his **list of integrated components** as the claimed invention does. As the examiner has stated: "Dowling does not **explicitly** disclose, that the integrated circuit comprises a memory to store the information about the properties of said beams to be displayed". Moreover Dowling **explicitly** discloses **using an external memory** (paragraph 0053, 2<sup>nd</sup> sentence):

"A processor may include a microprocessor, microcontroller, programmable digital signal processor or other programmable device, **along with external memory** such as read-only memory, programmable read-only memory, electronically erasable programmable read-only memory, random access memory, dynamic random access memory, double data rate random access memory, Rambus direct random access memory, flash memory, or any other volatile or non-volatile memory for storing program instructions, program data, and program output or other intermediate or final results.

Therefore Applicant respectfully still disagrees that Dowling discloses or suggests using an integrated memory to store the information about the properties of said beams to be displayed as the claimed invention does. The only citation of an deployment of an memory used is in paragraph 53, shown above, wherein an **external memory** is disclosed.

Furthermore Dowling shows in his **Fig. 1** a processor 2 being connected to an user interface 1 and to a memory 6 via another connection, i.e. there is no direct link between the interface and the memory, they are connected only via the processor. Dowling does **not** disclose a **direct connection** between user interface and memory as claim 1 of the claimed invention discloses:

“an user interface to input information about properties of said light beams, wherein said **interface is directly connected to a memory**”.

Moreover Dowling discloses in his Fig. 4 controllers 3, i.e. LED drivers, being deployed between processor 2 and LEDs 4. The claimed invention discloses a LED driver unit being deployed between memory and first terminals of the LED modules and a sequencer being connected to second terminals of the LED modules, as claimed in claim 1 of the claimed invention:

**said memory** to store the information about the properties of said beams to be displayed;

**a sequencer** to control an LED driver unit, wherein the sequencer **is connected to second terminals of an arrangement of at least one LED module**;

**said LED driver** unit comprising a driver for each color of said LED modules able to control the intensity of light, wherein the **LED driver unit is connected between said memory and first terminals** of said arrangement of at least one LED module; ...”

Summarizing the above, it should be noted that Dowling does neither disclose a user interface being directly connected to a memory nor an integrated circuit having a memory integrated.

Colorado discloses an apparatus and method for displaying an illumination pattern including a plurality of illumination regions.

It should be noted that Colorado does not disclose an integrated circuit comprising

**“an user interface** to input information about properties of said light beams, wherein said interface is directly connected to a memory;  
**said memory** to store the information about the properties of said beams to be displayed;  
as the claimed invention does.

Applicant respectfully disagrees that Colorado discloses **“an integrated circuit comprising... said memory** to store the information about the properties of said beams to be displayed. Albeit Colorado discloses (col.2, lines 63-68):

“The term processor should not be construed to refer exclusively to hardware capable of executing software and may implicitly include DSP hardware, ROM for storing software, RAM, and any other volatile or non-volatile storage medium”,

the memory mentioned above does not refer to a “memory to store the information about the properties of said light beams to be displayed” as claimed in the claimed invention. Applicant believes that it would be speculative to assume that the memory cited above would be used “for storing information about the properties of said light beams to be displayed” as the claimed invention does..

Colorado describes in more details memory 154, as shown in his Fig. 4., storing the illumination pattern., (col. 4, lines 12-17):

“The processor 102 receives the illumination pattern 108 from a memory 154, wherein the memory 152 (sic!) may be, but not limited to, **a single memory, a plurality of memory locations, shared memory, CD, DVD, ROM, RAM, EEPROM, optical storage, or any other non-volatile storage medium** capable of storing digital data.”

It should be noted that Colorado does nowhere disclose his memory 154, storing the illumination pattern, being integrated with his processor 102, while the claimed invention discloses while the claimed invention discloses:

**“an integrated circuit comprising:**

**an user interface** to input information about properties of said light beams, wherein said interface is directly connected to a memory;

**said memory** to store the information about the properties of said beams to be displayed;

**a sequencer** to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;

**said LED driver unit** comprising a driver for each color of said LED modules able to control the intensity of light, wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module; and

**an electrical connection** between said LED driver unit and said arrangement of at least one LED module;”

Furthermore it should be noted that Colorado does not disclose “**an integrated circuit comprising: an user interface** to input information about properties of said light beams, wherein said interface is directly connected to a memory; “ as the claimed invention does.

More over it should be noted that Colorado does nowhere disclose an integrated solution for his invention. Colorado discloses instead a **portable device** but **not an integrated solution** as the claimed invention does. Colorado discloses (col. 2, lines 53-55):

“More specifically, FIG. 1 illustrates a **portable device** 100 that contains a processor 102, a first illumination region 104 and a second illumination region 106.”

Due to the significant differences between Colorado and Dowling a combination of both inventions is believed to be generally non-obvious.

Furthermore none of the applied references nor a combination thereof address the system of the claimed invention disclosing an **integrated circuit** comprising amongst other components "**an user interface** to input information about properties of said light beams, wherein said interface is directly connected to a memory; and **said memory** to store the information about the properties of said beams to be displayed; ".

Base claim 1 is believed to be patentable over Dowling in view of Colorado as it is respectfully suggested that the combination of these two references cannot be made without reference to Applicant's own invention. The system of base claim 1 is believed to be novel and patentable over these references because a combination of the claimed elements would not address the system of the claimed invention, providing an **integrated circuit** comprising an **user interface being directly connected to a memory to store the information about the properties of said beams to be displayed, a sequencer, and a LED driver unit**, and would not be obvious to one skilled in art. That is to say there **must be something in the prior art** or line of reasoning to suggest that the **combination of these two references is desirable**. We believe that there is no such basis for the combination.

Claims **3, 8, 11-15, 17-20, 22-23, and 26-29** are dependent claims upon base claim **1** which is believed to be patentable according to the arguments outlined above.

Claim **30** of the claimed invention teaches:

- 30.** (currently amended) A system for visual, electronic communication, highlighting information/events, wherein LED modules are displaying related light signals having defined properties representing said different information/events, is comprising:
- an integrated circuit comprising:
    - an user interface to input information about properties of said light beams, wherein said interface is directly connected to a memory;
    - said memory to store the information about the properties of said signals to be displayed;
    - a sequencer to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;
    - said LED driver unit comprising a driver for each color of LED able to control the intensity of light , wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module; and
    - an electrical connection between said LED driver unit and said arrangement of at least one LED module; and
    - said arrangement of at least one LED module.

The same arguments apply for claim **30** as outlined above for claim **1**. Therefore applicant believes claim **30** to be patentable.

Claims **32, 37, 40-45, 49-51, 53-54, and 57-60** are dependent claims upon base claim **30** which is believed to be patentable according to the arguments outlined above.

The amended claim **61** discloses:



**61.**(currently amended) A phone system highlighting information/events, wherein LED modules are displaying related signals representing said different information/events, is comprising:

an integrated circuit comprising:

an user interface to input information about properties of said light beams, wherein said interface is directly connected to a memory;

said memory to store the information about the properties of said signals to be displayed;

a sequencer to control an LED driver unit, wherein the sequencer is connected to second terminals of an arrangement of at least one LED module;

said LED driver unit comprising a driver for each color of LED able to control the intensity of light , wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module; and

an electrical connection between said LED driver unit and said arrangement of at least one LED module; and  
said arrangement of at least one LED module.

The same arguments apply for claim **61** as outlined above for claim 1. Therefore applicant believes claim **61** to be patentable.

Claims **62-63, 65, 67-70, 75, 78-84, 86-89, 91-92** and **95-98** are dependent claims upon base claim **61** which is believed to be patentable according to the arguments outlined above.

10. Reconsideration of the rejection of claims 4-7, 33-36, 71-74, 99-100, and 102-106 under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688), hereinafter Dowling, in view of Colorado (US 7,016,701) and further in view of Mueller et al. (US6,016,038), hereinafter Mueller, is requested, based on amended claims and on following remarks:

Claims 4-7, 33-36, and 71-74 are dependent claims upon base claim 1, respective base claim 30 or base claim 61, which are believed to be patentable according to the arguments outlined above.

The amended claim 99 of the claimed invention discloses:

99. A method to establish visual, electronic communication, highlighting information/events, wherein LED modules are displaying related light signals having defined properties representing said different information/events comprising:
- providing an **integrated circuit** comprising an user interface being directly connected to a **memory to store the information about the properties of said signals to be displayed**, a sequencer, a LED driver unit connected to LEDs, and one or more LED modules, comprising more than one LED each;
  - determine the information to be visually highlighted;
  - define the kind of highlighting of the information selected above;
  - compose the sequencer steps according to the definitions of the two steps above;
  - if said composing software is built into a phone, store the sequences in said memory;
  - otherwise download sequences and store them in said memory; and
  - ready for operation.

In regard of the disclosures of Dowling and Colorado the same arguments apply for claim 99 as outlined above for Claim 1. None of the both applied references nor a combination thereof address the method of the claimed invention disclosing “providing an **integrated circuit** comprising an **user interface** being directly connected to a **memory** to store the information about the properties of said signals to be displayed, a sequencer, a LED driver unit connected to LEDs, and one or more LED modules”.

Mueller et al. disclose (col. 2, lines 21-37) :

"In brief, the invention herein comprises a pulse width modulated current control for an LED lighting assembly, where each current-controlled unit is uniquely addressable and capable of receiving illumination color information on a computer lighting network. In a further embodiment, the invention includes a binary tree network configuration of lighting units (nodes). In another embodiment, the present invention comprises a heat dissipating housing, made out of a heat-conductive material, for housing the lighting assembly. The heat dissipating housing contains two stacked circuit boards holding respectively the power module and the light module. The light module is adapted to be conveniently interchanged with other light modules having programmable current, and hence maximum light intensity, ratings. Other embodiments of the present invention involve novel applications for the general principles described herein.

Furthermore Mueller et al. discloses using **multiple integrated circuits** while in the claimed invention all components are integrated in **one integrated circuit** as disclosed in base claim **99**.

Mueller discloses (col. 4, lines 17-19):

"Also connected to pin connector 210 are three current programming integrated circuits, ICR 220, ICB 240 and ICG 260."

Furthermore Mueller discloses (col. 4, 48-54)

"The red, blue and green LED currents enter another integrated circuit, IC1 380, at respective nodes 324, 344 and 364. IC1 380 is preferably a high current/voltage Darlington driver, part no. DS2003 available from the National Semiconductor Corporation, Santa Clara, Calif. IC1 380 is used as a current sink, and functions to switch current between respective LED sets and ground 390."

Moreover Mueller discloses (col.5, lines 12-14):

"The structure and operation of microcontroller IC2 400 will now be described. Microcontroller IC2 400 is preferably a MICROCHIP brand PIC16C63,"

Due to the significant differences between Mueller, Colorado and Dowling a combination of Mueller with the inventions of Dowling and Colorado is believed to be generally non-obvious.

None of the applied references nor a combination thereof address the method of claim 99 of the claimed invention disclosing “providing an **integrated circuit** comprising an user interface being directly connected to a memory to store the information about the properties of said signals to be displayed, a sequencer, a LED driver unit connected to LEDs, and one or more LED modules”.

Base claim 99 is believed to be patentable over Dowling in view of Mueller (US 6,016,038) as it is respectfully suggested that the combination of these two references cannot be made without reference to Applicant's own invention. The method of base claim 99 is believed to be novel and patentable over these references because a combination of the claimed elements would not address the method of the claimed invention, providing an **integrated circuit** comprising an interface, a memory to store the information about the properties of said signals to be displayed, a sequencer, a LED driver unit connected to LEDs, and one or more LED modules, comprising more than one LED each; and would not be obvious to one skilled in art. That is to say there must be something in the prior art or line of reasoning to suggest that the combination of these two references is desirable. We believe that there is no such basis for the combination.

Claims **100** and **102-106** are dependent claims upon base claim **99** which is believed to be patentable according to the arguments outlined above.

11. Reconsideration of the rejection of claims **9-10**, **38-39**, and **76-77** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of Tokimoto et al. (US 6,690,341) is requested, based on the following remarks:

Claims **9-10** are dependent claims upon base claim **1**, claims **38-39** are dependent claims upon base claim **30**, and claims **76-77** are dependent claims upon base claim **61**, all these three base claims **1**, **30** and **61** are believed to be patentable according the arguments outlined above.

12. Reconsideration of the rejection of claims **16**, **47** and **85** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of Nishimura et al. (US 2003/0013484) is requested, based on the following remarks:

Claim **16** is a dependent claim upon base claim **1**, claim **47** is a dependent claim upon base claim **30**, and claim **85** is a dependent claim upon base claim **61**, all these three base claims **1**, **30** and **61** are believed to be patentable according the arguments outlined above.

13. Reconsideration of the rejection of claims **24-25**, **55-56** and **93-94** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of Sasaki et al. (US 6,404,139) is requested, based on the following remarks:

Claims **24-25** are dependent claims upon base claim **1**, claims **55-56** are dependent claims upon base claim **30**, and claims **93-94** are dependent claims upon base claim **61**, all these three base claims **1**, **30** and **61** are believed to be patentable according the arguments outlined above.

14. Reconsideration of the rejection of claim **64** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of view of Kitano et al. (US 2003/0216151) is requested, based on the following remarks:

Claim **64** is a dependent claim upon base claim **61**, which is believed to be patentable according the arguments outlined above.

15. Reconsideration of the rejection of claim **66** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and further in view of in view of Kota et al.. (US 7,003,318) is requested, based on the following remarks:

Claim **66** is a dependent claim upon base claim **61**, which is believed to be patentable according the arguments outlined above.

16 Reconsideration of the rejection of claim **101** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and Mueller et al.(US 6,016,038) and further in view of Tokimoto et al. (US 6,690,341) is requested, based on the following remarks:

Claim **101** is a dependent claim upon base claim **99**, which is believed to be patentable according the arguments outlined above.

17. Reconsideration of the rejection of claim **107** under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US7,016,701) and Mueller et al. (US 6,016,038) and further in view of Nishimura et al. (US 2003/013484) is requested, based on amended claims and on the following remarks:

Claim **107** is a dependent claim upon base claim **99**, which is believed to be patentable according the arguments outlined above.

Furthermore it should be noted that the Examiner **needed to use totally eight prior art references**, as Dowling, Colorado, Mueller, Tokimoto, Nishimura, Sasaki, Kitano and Kota to find elements of the invention, and the **need to rely on such a large**

**number of prior art references is believed to be a further indication of the non-obviousness of the claimed invention.**

Allowance of all Claims is requested.

It is requested that should the Examiner not find that the Claims are now Allowable that the Examiner call the undersigned at 845-452-5863 to overcome any problems preventing allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'SBA', with a long horizontal flourish extending to the right.

Stephen B. Ackerman, Reg. No. 37,761